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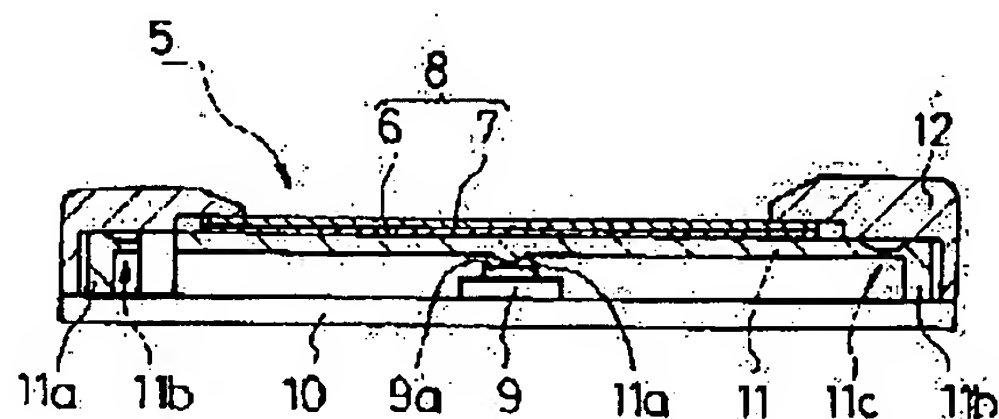
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(54) 【考案の名称】 スイッチ付タブレット

(57) 【要約】

【目的】 本考案は、入力装置のタブレットに関し、入力操作がダブルアクションになって操作性が悪いと言う問題点を解決することにある。

【構成】 基板シートに導電膜を貼着して電極面を設けた電極材6、7を所定の間隙を有して前記電極面を対向させて並設したタブレット8であって、前記一方の電極材6側に所定の間隙を有して当該一方の電極材6で押圧されて作用するメカニカルスイッチ9を配設したことである。これによって、所望のカーソル位置に移動させるタブレットにおいて一ヶ所連続押圧操作でそのまま確定入力ができることになる。



【実用新案登録請求の範囲】

【請求項1】 基板シートに導電膜を貼着して電極面を設けた二つの電極材を所定の間隙を有して前記電極面を対向させて並設したタブレットであって、前記一方の電極材側に所定の間隙を有して当該一方の電極材で押圧されて作用するメカニカルスイッチを配設したことを特徴とするスイッチ付タブレット。

【図面の簡単な説明】

【図1】 本考案に係るスイッチ付タブレットの縦断面図である。

【図2】 同スイッチ付タブレットの平面図である。

【図3】 同スイッチ付タブレットの使用状態を説明する縦断面図である。

【図4】 同スイッチ付タブレットの使用状態を説明する*

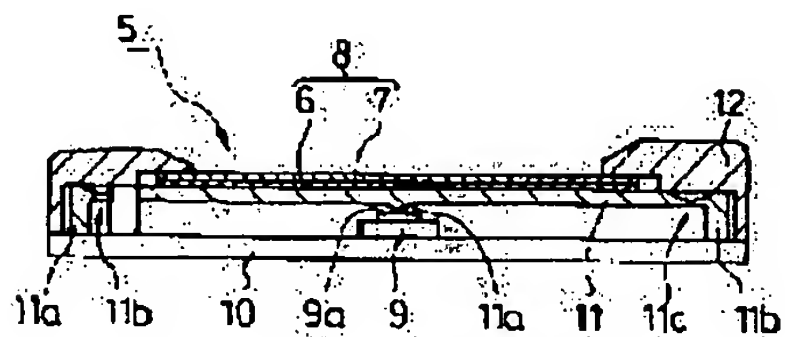
*縦断面図である。

【図5】 従来例に係るタブレットの使用を説明する斜視図である。

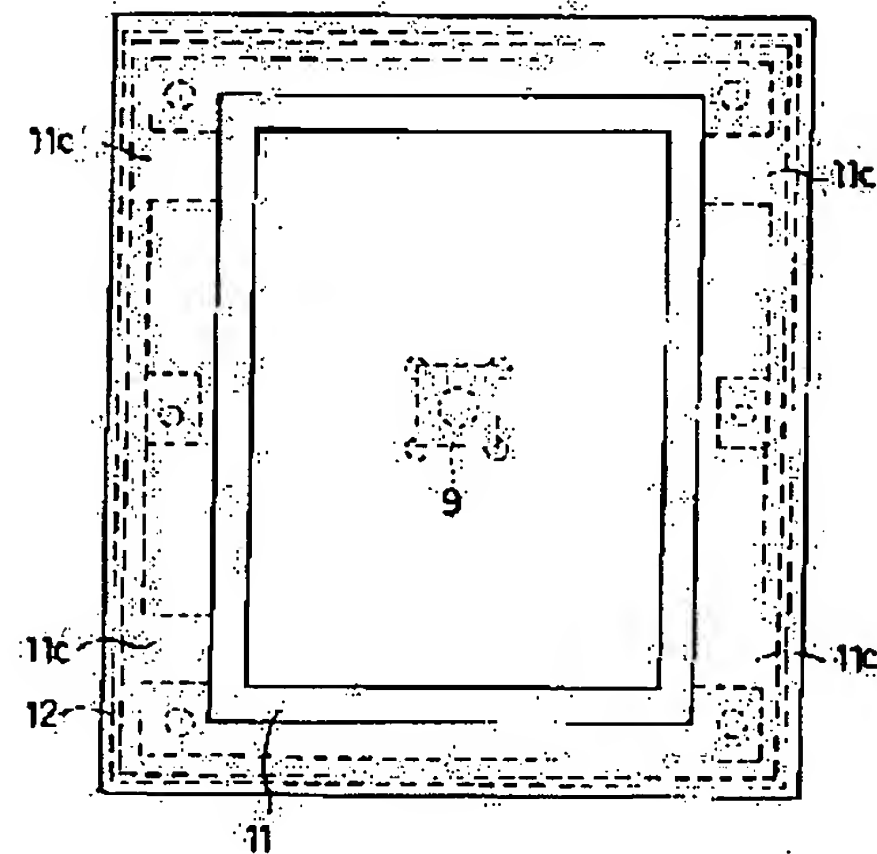
【符号の説明】

- 5 スイッチ付タブレット、
- 6, 7 電極材、
- 8 タブレット、
- 9 メカニカルスイッチ、
- 9 a 凸部、
- 10 プリント基板、
- 11 ヒンジユニット、
- 11 a 突起、
- 11 b 脚部、
- 11 c ヒンジ部。

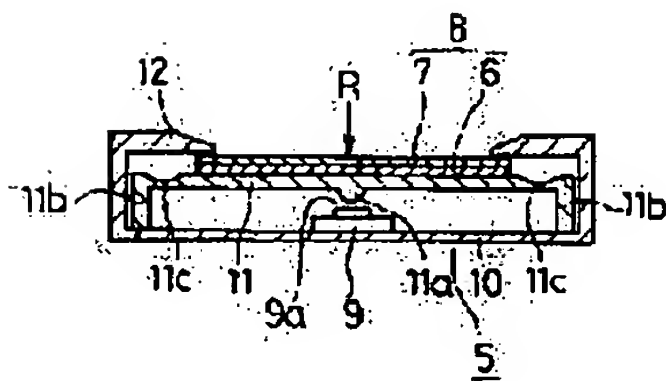
【図1】



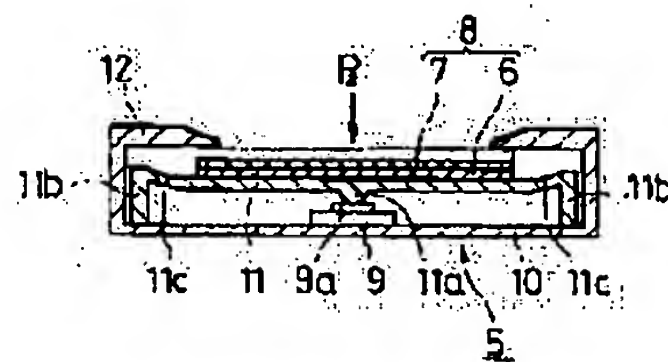
【図2】



【図3】



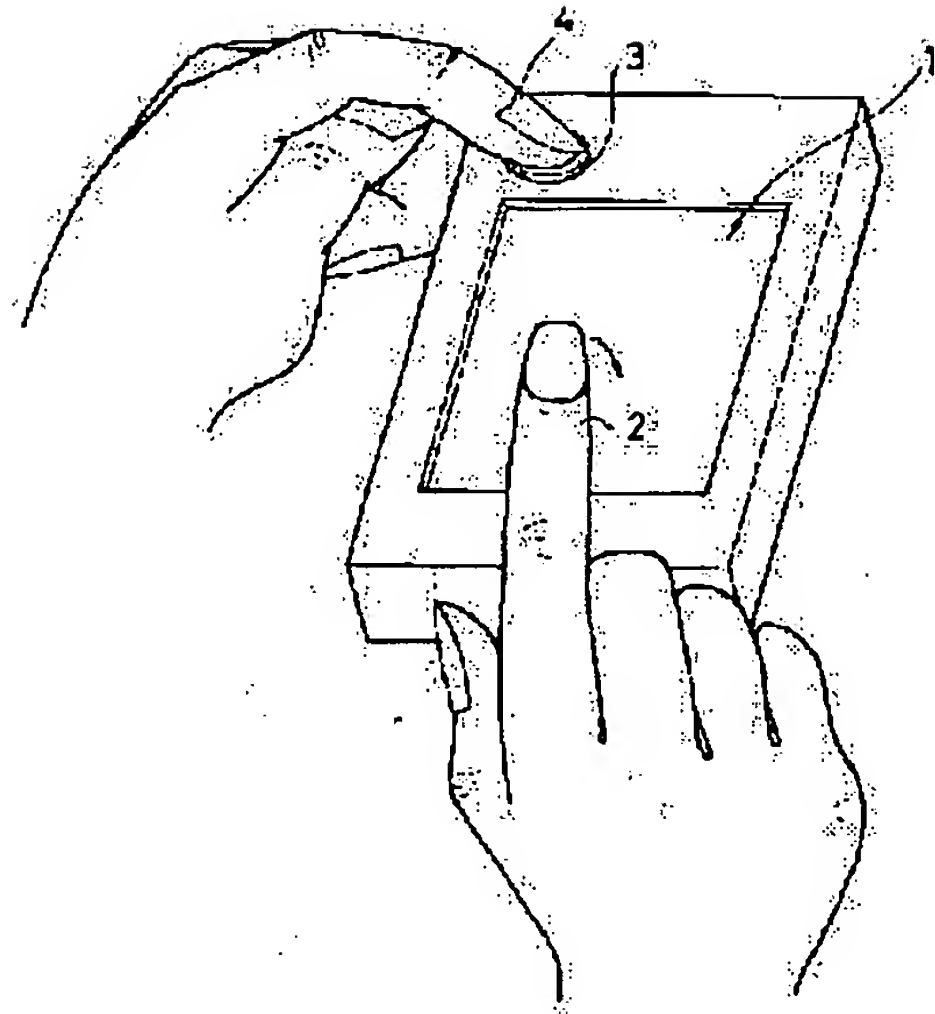
【図4】



(3)

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【図5】



【考案の詳細な説明】**【0001】****【産業上の利用分野】**

本考案は、電子・電気機器等の装置に有する入力装置のタブレットに関する。

【0002】**【従来の技術】**

従来は、入力装置として、図5に示すような、ディスプレイ上のカーソルを移動等をさせるためのタッチ・パネル1が採用され、該タッチ・パネルの構造は、ポリエステル・フィルム等の基板シートに透明導電膜をコーティングした電極材を形成して、その電極材をその電極面を対向させて配置し一方の電極材の電極面に絶縁ドットスペーサを突設してあり、前記一方の電極材のシート面を指等で押圧して前記透明導電膜を電氣的に短絡させてマトリクス配置の電極と接続した制御回路によって若しくは電位勾配をデジタル変換したデータが制御回路に伝達されて各々タッチした位置を検出していた。

【0003】**【考案が解決しようとする課題】**

しかしながら、上述の抵抗膜方式によるタッチ・パネル1では、操作者の指2でタッチした箇所の位置検出によってディスプレイ上のカーソルが所定の方向に、所定量で移動するだけであった。

【0004】

よって、例えば、ディスプレイ上のカーソルを所望の位置にまで移動させた後に、別の確定入力スイッチ3を他方の手の指4もしくは前記指2を移動させて押圧入力し、入力確定やコマンド等を入力する必要があった。

【0005】

このように、従来のマウス機能を有するタッチ・パネルの入力操作では、カーソルを所望の位置に移動させた後に、更に別の場所にある入力確定キーやコマンドキー等を押圧するという入力操作を、両手を使ってもしくは片手を移動させてしなければならず、入力操作がダブルアクションになって操作性が悪いと言う問題点があった。

【0006】

よって、従来の家電機器等の電子・電気機器の入力装置におけるタッチ・パネルには、入力操作性において解決すべき課題を有している。

【0007】

【課題を解決するための手段】

本考案の上記課題を解決し上記目的を達成するための要旨は、基板シートに導電膜を貼着して電極面を設けた二つの電極材を所定の間隙を有して前記電極面を対向させて並設したタブレットであって、前記一方の電極材側に所定の間隙を有して当該一方の電極材で押圧されて作用するメカニカルスイッチを配設したこと

【0008】

【作用】

本考案のスイッチ付タブレットによれば、操作者が指等でタブレットの表面を押圧してカーソルを所望の位置に移動させ、次にそのカーソル位置で操作確定させるには、前記指等をそのままの位置で更に押し込むことで確定入力とすることができる。よって、他の場所の確定入力用のスイッチを押すために前記指等を移動させる手間や両手を使わなければならない煩わしさが省けて、所望のカーソル位置に移動させるタブレットにおいて一ヶ所連続押圧操作でそのまま確定入力ができることになる。

【0009】

【実施例】

次に、本考案に係る一実施例について図面を参照して詳細に説明する。

図1は、本考案に係るスイッチ付タブレット5の縦断面図である。このスイッチ付タブレット5は、各個別々の独立した入力用スイッチとなっている。

【0010】

前記スイッチ付タブレット5の詳細な構造は、基板シートに導電膜を貼着して電極面を設けた電極材6、7を所定の間隙を有して前記電極面を対向させて並設したタブレット8であって、前記一方の電極材6側に所定の間隙を有して当該一方の電極材6で押圧されて作用するメカニカルスイッチ9を配設したものである

【0011】

前記メカニカルスイッチ9はプリント基板10上に取り付けられており、そのスイッチの上下動する凸部9aが、当該メカニカルスイッチ9と前記タブレット8の電極材6との間に介在されたヒンジユニット11の突起11aで押圧され、メカニカルスイッチ9の電氣的ON, OFFとなるようになされている。

【0012】

前記ヒンジユニット11は、プラスチック製等の平面視で矩形状の絶縁体であり、上面板部とその脚部11bとの接続部分にはくびれを有したヒンジ部11cが形成されている。該ヒンジ部11cは、図2に示すように、4箇所て上面板部と脚部11bとが接続されている。

このヒンジ部11cで、前記ヒンジユニット11が下方向に押圧された後に、その押圧力が解除されると弾発力で上方向へ元の位置に復帰するようになっている。前記くびれの程度はその材質の弾発力によって設計的に決めるものである。

なお、前記ヒンジユニット11はプラスチック製に限らず合成ゴムで成形してもよいものである。

【0013】

また、前記ヒンジユニット11は、前記タブレット8が指等で押圧されて電氣的接続がなされる程度の押圧力では下方向に押し下げられず、前記ヒンジ部11cの弾発力で抵抗するようになされている。よって、タブレット8を指等でソフトタッチで押圧して電氣的接続し、カーソルが所定の位置に移動する。更にそのまま前記指等を強く押し込むと、タブレット8とヒンジユニット11を介してメカニカルスイッチ9の凸部9aが押し込まれてON状態となって電氣的接続がなされ確定入力となるのである。

【0014】

このようにして形成された本考案のスイッチ付タブレット5を使用すれば、図3に示すように、電子・電気機器等の装置の入力装置に配設された各スイッチ付タブレット5のタブレット8における上側の電極材7を操作者の指等で押す。

【0015】

この指のソフトタッチ（押圧力 P_1 ）によって、所定の間隙を有していた電極材6、7の電極面が接触して電氣的接続がなされディスプレイ上のカーソルが所定の位置に移動する。

【0016】

更に、図4に示すように、前記ソフトタッチよりも強い力（ P_2 ）でタブレット8を下に押しつけると、前記電極材6、7が当接したままでヒンジユニット11の上面板部を押し下げ、該ヒンジユニット11の下面に設けられた突起11aがメカニカルスイッチ9の凸部9aを押圧して該メカニカルスイッチ9がON状態となる。これによって、入力が確定されて前記カーソルが移動した箇所におけるコマンドが実行されることになる。

【0017】

次に、前記押し込んだ指等を離すと、前記ヒンジユニット11の4箇所のヒンジ部11cによる弾発力によって上に復帰し、同時に押し下げられていたタブレット8も押し上げられて元の位置に復帰する。

【0018】

こうして、スイッチ付タブレット5で一箇所で、タブレット8によるカーソルの移動と更に確定入力が可能となったものである。なお、本考案のスイッチ付タブレット5のような一ヶ所連続押圧操作の構成はメンブレンスイッチにも適用できるものである。

【0019】

【考案の効果】

以上説明したように、本考案に係るスイッチ付タブレットは、基板シートに導電膜を貼着して電極面を設けた二つの電極材を所定の間隙を有して前記電極面を対向させて並設したタブレットであって、前記一方の電極材側に所定の間隙を有して当該一方の電極材で押圧されて作用するメカニカルスイッチを配設したので、所望のカーソル位置に移動させるタブレットにおいて一ヶ所連続押圧操作でそのまま確定入力ができるようになって、他の場所の確定入力用のスイッチを押すために指等を移動させる手間や両手を使わなければならない煩わしさが省けて操作性が向上すると云う優れた効果を奏する。

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CLAIMS

[Utility model registration claim]

[Claim 1] The tablet with a switch characterized by arranging the mechanical switch which is the tablet which have a predetermined gap for two electrode material which stuck the electric conduction film on the substrate sheet, and prepared the electrode surface, and said electrode surface was made to counter, and was installed, has a predetermined gap, is pressed by concerned one electrode material, and acts on one [said] electrode material side.

[Translation done]

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DETAILED DESCRIPTION

[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the tablet of the input device which it has to equipments, such as an electron and an electrical machinery and apparatus.

[0002]

[Description of the Prior Art]

Conventionally, the touch panel 1 for carrying out migration etc. is adopted in the cursor on a display as shown in drawing 5 as an input device. The structure of this touch panel The electrode material which coated substrate sheets, such as a polyester film, with the transparency electric conduction film is formed. Make the electrode surface counter, while arranges the electrode material, and the insulating dot spacer is protruded on the electrode surface of electrode material, the control circuit which pressed the sheet surface of one [said] electrode material with the finger etc. was made to short-circuit said transparency electric conduction film electrically, and was connected with the electrode of matrix arrangement — or the location where the data which carried out digital conversion were transmitted to the control circuit, and touched the electric potential gradient respectively was detected.

[0003]

[Problem(s) to be Solved by the Device]

However, at the touch panel 1 by the above-mentioned resistance film method, the cursor on a display only moved in the predetermined direction by the specified quantity by location detection of the part touched with an operator's finger 2.

[0004]

Therefore, for example, after moving the cursor on a display even to a desired location, the digiti manus 4 or said finger 2 of another side needed to be moved, the press input of another definite input switch 3 needed to be carried out, and input decision, a command, etc. needed to be inputted.

[0005]

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TECHNICAL FIELD

[Industrial Application]

This design is related with the tablet of the input device which it has to equipments, such as an electron and an electrical machinery and apparatus.

[0002]

[Translation done.]

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PRIOR ART

[Description of the Prior Art]

Conventionally, the touch panel 1 for carrying out migration etc. is adopted in the cursor on a display as shown in drawing 5 as an input device. The structure of this touch panel The electrode material which coated substrate sheets, such as a polyester film, with the transparence electric conduction film is formed. Make the electrode surface counter, while arranges the electrode material, and the insulating dot spacer is protruded on the electrode surface of electrode material. the control circuit which pressed the sheet surface of one [said] electrode material with the finger etc., was made to short-circuit said transparence electric conduction film electrically, and was connected with the electrode of matrix arrangement -- or the location where the data which carried out digital conversion were transmitted to the control circuit, and touched the electric potential gradient respectively was detected.

[0003]

[Translation done.]

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EFFECT OF THE INVENTION

[Effect of the Device]

As explained above, the tablet with a switch concerning this design. It is the tablet which have a predetermined gap for two electrode material which stuck the electric conduction film on the substrate sheet, and prepared the electrode surface, and said electrode surface was made to counter, and was installed. Since the mechanical switch which has a predetermined gap, is pressed by concerned one electrode material, and acts on one [said] electrode material side was arranged. Come to be able to perform a definite input as it is in one place continuation press actuation in the tablet moved to a desired cursor location. In order to push the switch for the definite input of other locations, the outstanding effectiveness which says that the troublesomeness which must use the time and effort to which a finger etc. is moved, and both hands can be excluded, and operability improves is done so.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Device]

However, at the touch panel 1 by the above-mentioned resistance film method, the cursor on a display only moved in the predetermined direction by the specified quantity by location detection of the part touched with an operator's finger 2.

[0004]

Therefore, for example, after moving the cursor on a display even to a desired location, the digiti manus 4 or said finger 2 of another side needed to be moved, the press input of another definite input switch 3 needed to be carried out, and input decision, a command, etc. needed to be inputted.

[0005]

Thus, after moving cursor to a desired location in the alter operation of the touch panel which has the conventional mouse function, one hand had to be moved using both hands, alter operation of pressing an input decision key, a command key, etc. in still somewhere else had to be carried out, alter operation became double action, and the trouble said that operability is bad was.

[0006]

Therefore, in the touch panel in the input device of an electron and electrical machinery and apparatus, such as the conventional household-electric-appliances device, it has the technical problem which should be solved in input operability.

[0007]

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MEANS

[Means for Solving the Problem]

The summary for solving the above-mentioned technical problem of this design, and attaining the above-mentioned purpose is: the tablet which have a predetermined gap for two electrode material which stuck the electric conduction film on the substrate sheet, and prepared the electrode surface, and said electrode surface was made to counter, and was installed, and consists in having arranged the mechanical switch which has a predetermined gap, is pressed by concerned one electrode material, and acts on one [said] electrode material side.

[0008]

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OPERATION

[Function]

In order according to the tablet with a switch of this design for an operator to press the front face of a tablet with a finger etc., to make it move to the location of a request of cursor and then to do actuation decision directly above the cursor location, said finger etc. can be considered as a definite input by pushing in further in a location as it is. Therefore, in order to push the switch for the definite input of other locations, the troublesomeness which must use the time and effort to which said finger etc. is moved, and both hands can be excluded, and in the tablet moved to a desired cursor location, a definite input can be performed as it is in one-place continuation press-actuation.

[0009]

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EXAMPLE

[Example]

Next, one example concerning this design is explained to a detail with reference to a drawing.

Drawing 1 is drawing of longitudinal section of the tablet 5 with a switch concerning this design: this tablet 5 with a switch — each — it is the separate independent switch for an input.

[0010]

The detailed structure of said tablet 5 with a switch is the tablet 8 which have a predetermined gap for the electrode material 6 and 7 which stuck the electric conduction film on the substrate sheet, and prepared the electrode surface, and said electrode surface was made to counter, and was installed, and arranges the mechanical switch 9 which has a predetermined gap, is pressed by concerned one electrode material 6, and acts on one [said] electrode material 6 side.

[0011]

it is attached on the printed circuit board 10, heights 9a to which the switch moves up and down is pressed by projection 11a of the hinge unit 11 which intervened between the mechanical switches 9 and the electrode material 6 of said tablet 8 concerned, and the mechanical switch 9 of said mechanical switch 9 is electric — it is made as [come / ON and OFF].

[0012]

Said hinge unit 11 is a rectangular-like insulator in plane view, such as a product made from plastics, and hinge region 11c with the vena contracta is formed in a part for the articulated section of top-face 11a and its leg 11b. As for this hinge region 11c, top-face 11a and leg 11b are connected [drawing 2] by four places so that it may be shown.

After said hinge unit 11 is pressed downward by this hinge region 11c, if that thrust is canceled, it will return to the original location upward by resiliency. Extent of said vena contracta is decided in design by the resiliency of the quality of the material.

In addition, said hinge unit 11 may be fabricated not only by the product made from plastics but by synthetic rubber.

[0013]

Moreover, by the thrust which is extent with which said tablet 8 is pressed with a finger etc. and electrical installation is made, said hinge unit 11 is not depressed downward, but is made as [resist / by the resiliency of said hinge region 11c]. Therefore, electrical installation of the tablet 8 is pressed and carried out by software touch with a finger etc., and cursor moves to a position. Furthermore, if said finger etc. is pushed in strongly as it is, heights 9a of the mechanical switch 9 will be pushed in through a tablet 8 and the hinge unit 11, it will be in ON condition, electrical installation will be made, and it will become a definite input.

[0014]

Thus, if the tablet 5 with a switch of formed this design is used, as shown in drawing 3, the electrode material 7 of the top in the tablet 8 of each tablet 5 with a switch arranged by the input device of equipments, such as an electron and an electrical machinery and apparatus, will be pushed with an operator's finger etc.

[0015]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is drawing of longitudinal section of the tablet with a switch concerning this design.

[Drawing 2] It is the top view of a tablet with the said switch.

[Drawing 3] It is drawing of longitudinal section explaining the busy condition of a tablet with the said switch.

[Drawing 4] It is drawing of longitudinal section explaining the busy condition of a tablet with the said switch.

[Drawing 5] It is a perspective view explaining use of the tablet concerning the conventional example.

[Description of Notations]

5 Tablet with Switch,

6 Seven Electrode material,

8 Tablet,

9 Mechanical Switch,

9a Heights,

10 Printed Circuit Board,

11 Hinge Unit,

11a Projection,

11b Leg,

11c Hinge region.

[Translation done.]

* NOTICES *

JPO and INPIT are not responsible for any damages caused by the use of this translation.

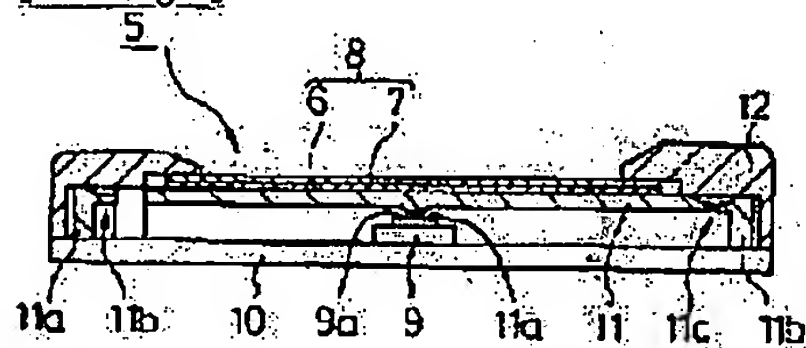
1. This document has been translated by computer. So the translation may not reflect the original precisely.

2. **** shows the word which can not be translated.

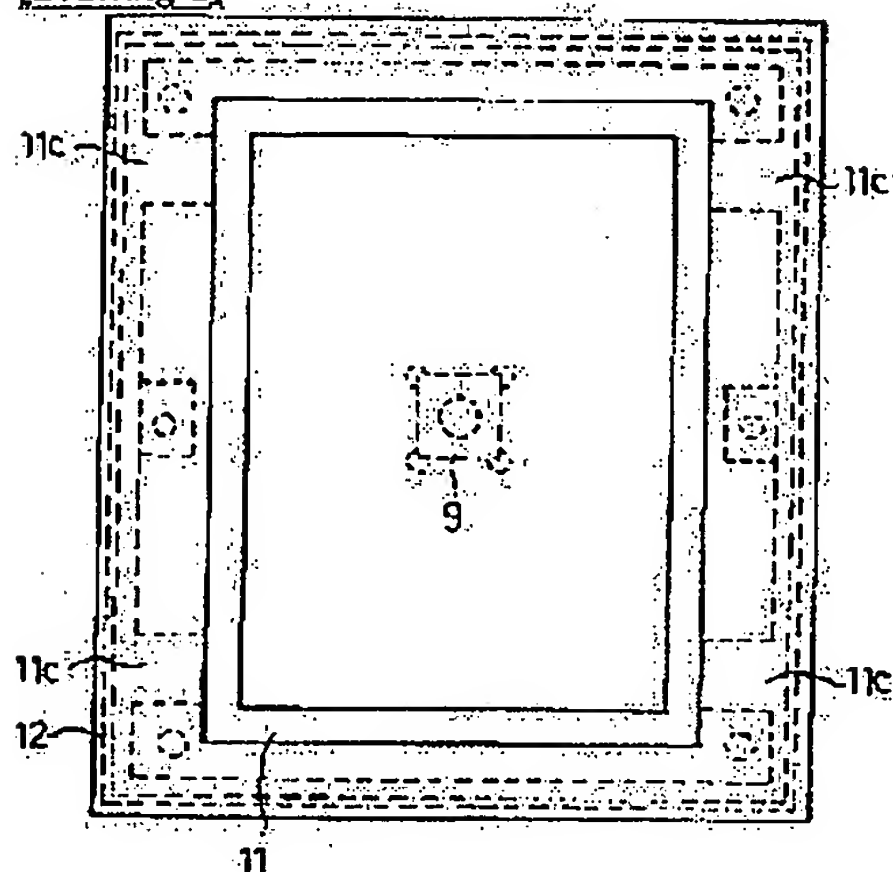
3. In the drawings, any words are not translated.

DRAWINGS

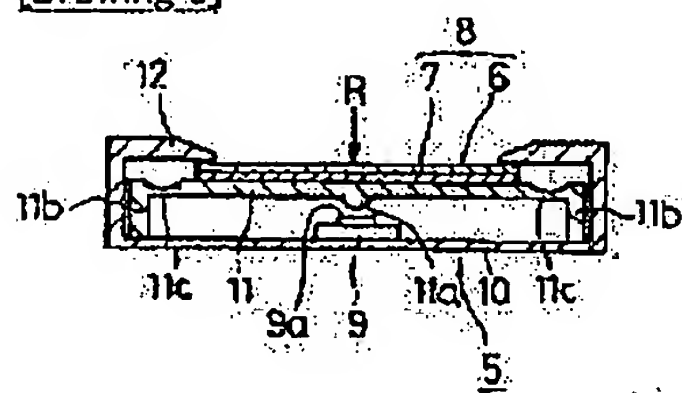
[Drawing 1]



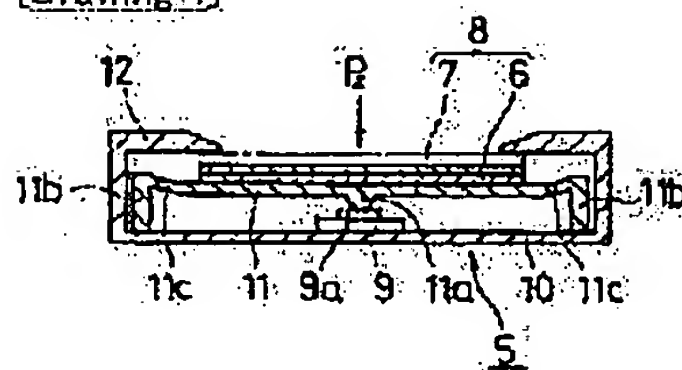
[Drawing 2]



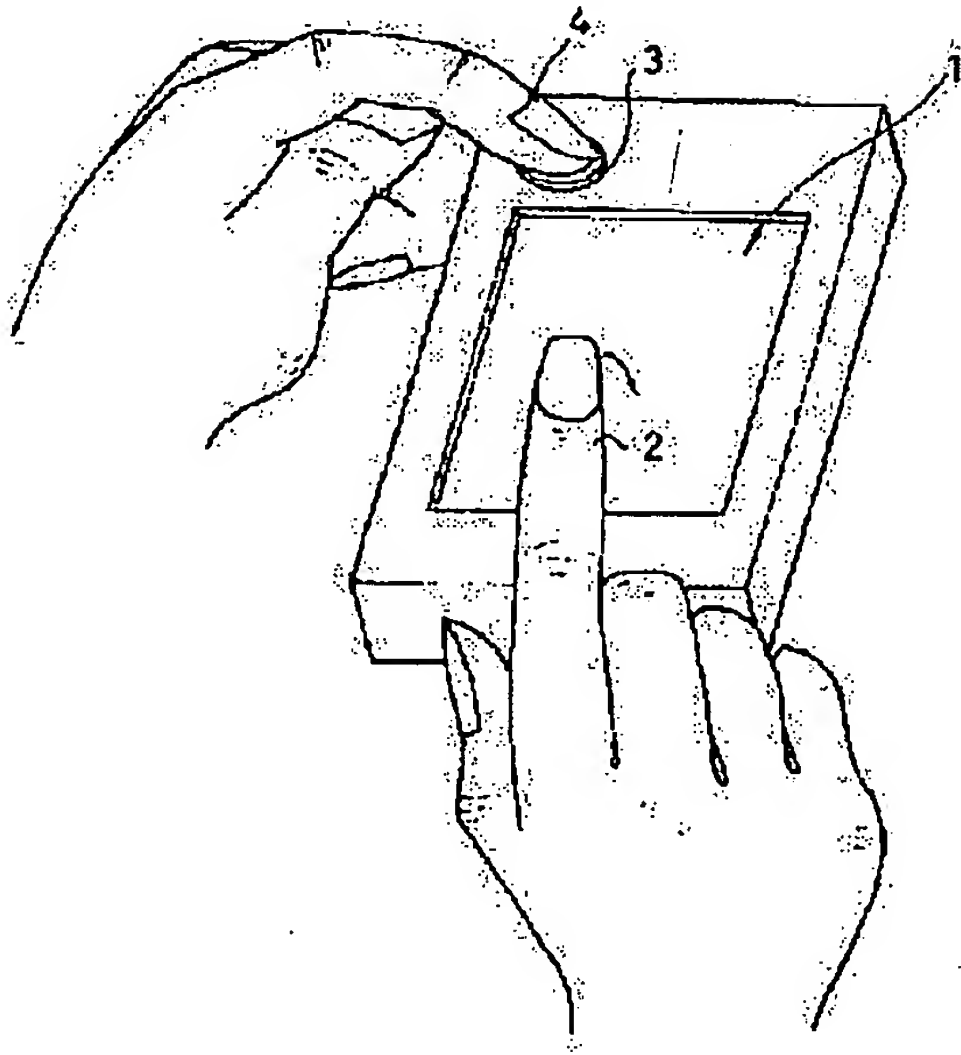
[Drawing 3]



[Drawing 4]



[Drawing 5]



[Translation: done.]